REMARKS

Claims 2-7 and 9 remain pending in this application, Claims 10-20 having been cancelled because they are drawn to a non-elected invention, and Claims 1 and 8 having been cancelled in addition. Claim 4 has been rewritten in independent form.

The drawings have been objected to on the grounds that they are inconsistent with the subject matter of Claim 9. In response to this ground of objection, Claim 9 has been amended in a manner so as to conform it to the specification and drawings. In particular, Claim 9 now recites that the low-voltage stator winding is positioned concentrically inside the high-voltage stator winding, as shown in Figure 2, and as discussed in the specification at page 5, lines 17-20. Accordingly, Claim 9 is now fully supported by and consistent with the specification and drawings, and accordingly, reconsideration and withdrawal of this ground of rejection are respectfully requested.

Claims 1-3 and 6-8 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Zinser (U.S. Patent No. 6,534,208) in view of Daikoku et al (U.S. Patent No. 6,737,778), while Claims 4, 5 and 9 have been rejected as unpatentable over the same two references, and further in view of Denk (U.S. Patent No. 5,304,883).

The present invention is directed to a system for generating electrical energy which includes a fuel cell stack for supplying electrical energy, as well as a compressor which is coupled to supply an oxidant flow to the fuel cell. A drive unit provided for driving the compressor includes at least two permanent-magnet electric motors which are mounted on a common rotor shaft that drives the compressor. Each of the permanent-magnet motors has a respective set of stator windings. According to a feature of the invention, the stator windings of the respective electric motors are arranged concentrically with respect to each other. In addition, according to another feature of the invention, the low-voltage stator winding is positioned concentrically inside the high-voltage stator winding. The latter features, which are recited in independent Claim 4 and dependent Claim 9 are neither taught nor suggested by the cited references.

The Zinser reference, which is issued in the name of one of the inventors of the present application, is similar to the extent that it provides first and second motors, which are rigidly coupled to each other, for driving a compressor pump 5 that supplies air to a fuel cell. However, Zinser fails to disclose the details of construction of the respective sets of stator windings of the two electric motors. In particular, Zinser does not disclose that the motors are permanent-magnet motors. Indeed, it is clear from both the specification and the drawing that they are not. (Rather, they are three-phase synchronous motors having both rotor and stator windings.) In addition, Zinser also fails to teach or suggest that the

respective sets of stator windings of the two electric motors are arranged concentrically with respect to one another, as recited in Claim 4, or that the low-voltage stator winding is positioned concentrically inside the high-voltage stator winding, as recited in Claim 9.

The latter features of the invention are said to be provided by Denk. In particular, the Office Action states that, to increase the performance of an electrical machine, Denk discloses a high current winding 32 that is concentrically inside a low-current winding 34, referring to Figure 2 and Column 2, lines 16-19. In addition, the Office Action also states that Denk teaches inherently that the winding 32 is a high-voltage winding, since the latter is a high-current conductor, and according to Ohm's Law, must therefore also be a high-voltage conductor.

Applicants respectfully submit, however, that the Denk patent does not teach or suggest two separate sets of windings, as recited in Claim 4, with the respective windings being arranged concentrically with respect to one another. Rather, in fact, the "inner" conductors 32 and the "outer" conductors 34 constitute consecutive segments or "portions" of the same windings, which carry the same current, as can clearly be seen in Figure 3. The inner portions 32 of the windings (that is, the segments of each turn which are closest to the rotor) have a smaller diameter and are more densely packed than the outer portion 34, which have a greater cross-sectional area and are more spatially dispersed, as

shown in Figure 2. Thus, current from the power lead C_N (46) flows consecutively through the inner and outer portions of the winding, through a conductor 52 and to an output power lead C_O (46). It is thus apparent, that the two inner and outer "portions" (Column 1, lines 28-33) of the windings together form a single conductive path, and that the same current flows through both portions. It is further apparent that the portion of the specification referred to in the Office Action at Column 2, lines 16-19 simply indicates that the current density amongst the "inner" conductors 32 is greater than that among the "outer" conductors 34, because the "inner" conductors have a smaller cross-sectional area and are more densely packed together. (See Figure 2.)

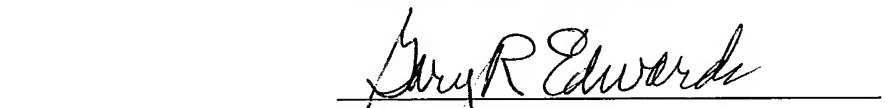
As can be seen from the foregoing brief description, the Denk reference does not disclose a motor having two separate sets of stator windings which are arranged concentrically with respect to one another. Moreover, it also fails to teach or suggest that, as recited in Claim 9, a low-voltage stator winding is positioned concentrically inside a high-voltage stator winding.

The Daikoku et al reference, on the other hand, has been cited only as disclosing, for the purpose of reducing torque ripples in electric machines, that first and second permanent-magnet motors are mounted on a common rotor. Accordingly, Daikoku et al fails to teach or suggest those features of the invention which are missing in both Zinser and Denk, as discussed above.

In light of the foregoing remarks, this application should be in condition for allowance, and early passage of this case to issue is respectfully requested. If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #102063.56891US).

Respectfully submitted,



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